REMARKS

New claims 137-172 replace claims 80-101 and 123-136, respectively.

In our response of 5 January 2004, we put forward arguments to traverse the Examiner's use of reference G.707. In the latest advisory action, the Examiner deems our argument not persuasive due, the Examiner asserts, to the claims not reciting "a limitation which indicates how the virtual concatenation is achieved". However, it is respectfully submitted that the Examiner's assertion only seems relevant, if at all, to independent claim 98 (now claim 155) and to claims 99-101 (now claims 156-158) dependent therefrom.

The essential feature that defines the virtually concatenated information structure of the present invention can be expressed as the use of *a part of the path overhead for indicating the frame sequence in the virtually concatenated information structure*. This is *not* found in the cited prior art (see "Anticipation", below).

Turning to the present claims, the Examiner accepts that a suitable limitation is present in independent claim 80 (now claim 137). The Examiner is therefore requested to allow claim 137 and hence claims 137-154 dependent therefrom.

Claim 155 now includes the above limitation and, hence, is also believed to be allowable together with its dependent claims 156-158.

The other independent claims are different, as these do not relate to conversion. Independent method claim 123 (now claim 159) does not claim conversion between information structures but merely to data transmission in a virtually concatenated form. Independent apparatus claims 155, 163 and 170-172 do not claim a means for conversion between information structures but merely to the virtually concatenated information structure and apparatus for the transmission of such an information structure. All these other independent claims include the essential feature ("the

use of a part of the path overhead for indicating the frame sequence", as identified above) that defines the virtually concatenated information structures of the present invention and distinguishes them from the cited prior art (see "Anticipation", below).

These further claims are not restricted to any particular way of converting information structures; indeed, the information structures of these claims could be described as generated (i.e., from unstructured information) or as converted from information in another structure. It is assumed therefore that the Examiner's intention here is to ensure that sufficient disclosure is given in the description as to how to create the information structures of these claims.

We maintain that sufficient information on how to generate or convert these information structures is taught by the description in combination with the common general knowledge of the skilled worker in the field of SDH. The extent of the common-general-knowledge has been set out in the declaration by the inventor, Ghani Abbas, filed in the present case. This is no sterile, intellectual argument: it is clear that, in the real world, an SDH engineer would not be able to perform his function if he did not have the ability to design equipment to correctly create and process these standard SDH structures. The present description should be read in the light of this common-general-knowledge and will be found to adequately instruct the skilled worker in the novel virtually concatenated information structure to the extent that he would be able to create such structures and to put the invention into effect. The Examiner is therefore requested to consider all these claims.

Anticipation: G.707.

The Examiner also takes issue with our assertion (in the response of 5 January 2004) that there is no teaching in the reference, G.707, of the use of a part of the path overhead of a virtually concatenated structure to indicate a sequence of frames in the virtually concatenated

structure. The Examiner's advisory action erroneously states that the reference teaches use of the H4 byte in virtually concatenated information structures; however, this cannot be found there. If the Examiner is of the opinion that this teaching can be found in the reference, then he is requested to identify the location. In this regard, the Examiner refers to the following parts of G.707: page 52, section 8.3.8 and Fig. 8-13 and page 64 section 9.3.1.1. The present invention is not limited to any specific part of the path overhead but, in the following, we shall follow the Examiner in referring to the use of the H4 path overhead byte.

We consider first the Examiner's use of section 8.3.8 and Fig. 8-13.

The claims are novel when compared to the disclosure of G.707 section 8.3.8 because the claims are limited to virtual concatenated information structures while that section does not teach concatenation (either virtual or contiguous). The section in question falls in part 8.3 of the reference entitled "TU-2/TU-1 Pointer" -- i.e., concerned with lower order tributary unit pointers. In this part, concatenation is dealt with at section 8.3.2, not at section 8.3.8 cited by the Examiner. Section 8.3.8 has nothing to do with concatenation.

Section 8.3.8 referred to by the Examiner, relates to a different use of the H4 byte from that set out in the present claims, as follows:

- the use of H4 described at section 8.3.8 of the reference is directed to the problem of distributing path overhead information across a multiframe of a lower-order virtual container. These lower-order virtual containers are too small to accommodate all of the overhead information. Hence, there is a need to distribute the information over a set of consecutive frames: the so-called "multiframe". The H4 byte allows receiving equipment to identify which part of the overhead information is present in the current frame by cycling through the values zero to three, as illustrated in Fig. 8-

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13/G.707. To quote from G.707: "The value of the H4 byte, read from the VC-4/VC-3 POH, identifies the frame phase of the next VC-4/VC-3 payload as shown in Fig. 8-13". This is illustrated by the arrows of Fig. 8-13 and the table of Fig. 8-14. Section 8.3.8 teaches the skilled reader use of the H4 byte to identify parts of the distributed path overhead. It teaches nothing about frame sequence of virtual concatenated information structures.

• the use of the H4 byte according to the present claims is directed to the problem of variable and unpredictable delay in the SDH communications network resulting in virtual containers arriving at their destination in a different sequence to that in which they were transmitted. This loss of sequence can result in corruption of the message if not corrected. This problem is not addressed by the reference. The variations in delay can result from the resilient nature of the network in which various parts of a message may follow different routes through the network to avoid faulty or overloaded equipment. According to the present invention, the sequence of the frames is indicated by the path overhead.

We now consider the Examiner's use of section 9.3.1.1. This section is entitled ""Path Trace: J1" and deals with use of path-overhead byte J1 of the virtual container 3 and 4 for providing a so-called "path access point identifier". This identifier is provided to allow a receiving terminal to verify continued connection to the intended transmitter. This section has nothing to do with either the H4 byte or frame sequence. Hence, the claims are also novel when compared to the disclosure of G.707 section 9.3.1.1.

The present invention brings significant advantages over the prior art of contiguous concatenation. The novel virtual concatenation solution provided by the invention of the present

claims advantageously achieves concatenation using the path overhead that is only processed at the termination of the path, i.e.. at the destination. As a result, the virtually concatenated structures of the present invention can be carried by the large installed SONET and SDH infrastructure without the modifications at intermediate nodes required to support conventional contiguously concatenated structures.

Allowance of claims 137-172 is respectfully requested.

Petition is hereby made for a three-month extension of the period to respond to the outstanding Official Action to April 3, 2004. A check in the amount of $950.00, as the Petition fee, is enclosed herewith. If there are any additional charges, or any overpayment, in connection with the filing of the amendment, the Commissioner is hereby authorized to charge any such deficiency, or credit any such overpayment, to Deposit Account No. 11-1145.

Wherefore, a favorable action is earnestly solicited.

Respectfully submitted,

KIRSCHSTEIN, OTTINGER, ISRAEL & SCHIFFMILLER, P.C.
Attorneys for Applicant(s)
489 Fifth Avenue
New York, New York 10017-6105
Tel: (212) 697-3750
Fax: (212) 949-1690

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Alan Israel
Reg. No. 27,564